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Report of the Australian Bureau of Statistics on the statistics of services

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its thirty-third session,** the Secretary-General has the honour to transmit the report of the Australian Bureau of Statistics on the statistics of services. The Commission may wish to review the work undertaken in services statistics and consider the points for discussion which are presented in paragraphs 7, 21, 41, 56, 69, 88, 95 and 98 of the report.

* E/CN.3/2003/1.

** See *Official Records of the Economic and Social Council, 2002, Supplement No. 4* (E/2002/24), para. 1.

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Statistics of services

Report of the Australian Bureau of Statistics*

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I. Introduction

1. The present report reviews work undertaken internationally in relation to conceptual development and practical measurement issues in the field of services statistics. Particular attention is given to classification of services and products, price indexes for services, international trade in services, and short-term indicators in services. Conceptual and measurement issues in emerging areas of information and communication technology, knowledge-based economy, innovation, globalization and non-profit institutions are also covered.

2. The report concludes with a summary of suggestions, for consideration and discussion by the Statistical Commission, of areas where further international collaboration might be useful.

II. Contributors to the development of services statistics

3. In less than two decades, the international statistical community has moved from a position where there were virtually no initiatives designed to coordinate or harmonize services statistics internationally to a position where a significant and growing number of expert groups are now active in this field. Under the auspices of the Commission, the Voorburg Group on Services Statistics, the Inter-Agency Task Force on Statistics of International Trade in Services, the Expert Group on International Economic and Social Classifications, the Intersecretariat Working Group on Price Statistics, the Ottawa Group on Price Indexes, the Delhi Group on Informal Sector Statistics, the International Comparison Programme (ICP) and the Round Table on Business Survey Frames are all helping to advance the development of services statistics. Furthermore, the increasing importance of service activities was a factor underlying the development of the 1993 System of National Accounts (SNA).

4. Looking more broadly than the Commission, the Organisation for Economic Cooperation and Development (OECD), the Statistical Office of the European Communities (Eurostat), the World Trade Organization (WTO) and the International Monetary Fund (IMF) are active in the development of services statistics, not only through their contributions to expert groups affiliated with the Commission but through their own separate initiatives.

5. In addition, the newly created OECD Short-term Economic Statistics Expert Group (STESEG) has established specific subgroups to look into important areas of short-term indicators for services, timeliness and benchmarking, data presentation and seasonal adjustment, and reducing cost and reporting load on providers. The United Nations Conference on Trade and Development (UNCTAD) collects data on operations of foreign affiliates in the services sector and is developing guidance material on the compilation of foreign direct investment statistics and statistics on the operations of foreign affiliates. The OECD Working Party on Indicators for the Information Society (WPIIS) has also been effective in advancing the information and communication technology (ICT) data framework internationally. The Committee for the Coordination of Statistical Activities has a broad role in coordination and integration of statistical programmes, although it is not addressing specific services statistics issues.

6. Services statistics have benefited greatly from the work of these disparate groups. The resources saved over the years through information-sharing and avoidance of duplicated research effort would be substantial. The more informal working arrangements underpinning the expert groups have also afforded a higher degree of flexibility to tackle new and emerging issues and to capitalize on the particular interests and energies of group members.

7. While these benefits are undoubtedly a good thing, the proliferation of expert groups with their different research agendas prompts the question of whether they are, collectively, tackling the priority issues confronting services statistics. Specific questions include:

- Is there more that should be done to coordinate the efforts of these groups, including communicating their work to the Statistical Commission?
- Are there important aspects of services statistics that are not receiving adequate attention by the groups?
- Is there any duplication of effort that could be rationalized, or effort being expended on less important activities that could be channelled elsewhere?
- Should the Voorburg Group be tasked with drawing together the work of these groups and with developing a more integrated research programme to which all can contribute?

III. International classifications

8. The most current international industrial and product classifications are the International Standard Industrial Classification of all Economic Activities, Version 3.1 (ISIC, Rev 3.1), and the Central Product Classification, Version 1.1 (CPC, Version 1.1). The Technical Subgroup of the Expert Group on International Economic and Social Classifications has started a revision of ISIC and CPC, and work is progressing according to a work plan approved by the Commission. Both revised classifications will be completed by 2007, with implementation occurring after that.

9. The Technical Subgroup has provided a concepts paper to the current session of the Commission, outlining the underlying principles of the revised classifications. Given the existence of that paper, little discussion on that topic is provided in the present report. After the Commission discussion, regional meetings will be held to discuss the proposed concepts and structures for both classifications.

A. ISIC

10. For ISIC, the Technical Subgroup has considered the three driving forces that condition any revision: continuity, relevance and comparability. A high-level structure has been proposed which takes those factors into account. Continuity was given a high priority in areas of the classification that have not been identified as targets for revision. Relevance was considered in areas where the classification needs to better reflect economic reality. Comparability was considered a priority in all parts of the classification in response to the Commission's request to address the issue of convergence between existing activity classifications. The proposed ISIC

2007 high-level structure makes substantial changes to a number of services areas, in recognition of the increasing importance of those activities internationally.

B. CPC

11. For CPC, the Technical Subgroup has yet to develop a clear definition of the revised classification, its new structure, its links to other classifications, and its role and application within the System of National Accounts. The work will be completed throughout 2003.

C. North American and European classifications

12. Canada, Mexico and the United States have undertaken an extensive research project to identify the final products of service industries. Their objective is to create a comprehensive, demand-based, market-oriented classification system (North American Product Classification System (NAPCS)) that will complement the supply-oriented North American Industry Classification System (NAICS) introduced in 1997. Since the beginning of the project, more than 1,800 detailed products have been identified and defined. Full coverage of all service products is expected to be completed by late 2005 for implementation in the survey programmes for reference year 2007.

13. A project to study the potential for greater convergence between the General Industrial Classification of Economic Activities within the European Communities (NACE) and NAICS was initiated in June 2000 by Canada, the European Union and the United States. The group working on that project has tried to use a common structure, with the same major categories at the top of the classification and 379 classes in common. To date no recommendations have been made regarding the adoption of any changes. The next phase of the project involves the launch of a consultation process with stakeholders.[1]

D. Trade in services classification

14. The IMF *Balance of Payments Manual, Fifth Edition* (BPM5) framework contains recommendations for the definition, valuation, classification and recording of resident to non-resident trade in services. By building on that framework, the *Manual on Statistics of International Trade in Services* (MSITS)[2] recommends extending the BPM5 classification of transactions by type of service to provide more detail through the Extended Balance of Payments Services (EBOPS) classification.[3]

15. A correspondence table between the EBOPS classification and CPC, Version 1.0 provides a clear definition of the components of the EBOPS classification. Except for construction services, the recommendations are consistent with BPM5. Thus, a country's balance of payments statistics will provide much of the data needed to implement the recommendations relating to the measurement of resident to non-resident trade in services. MSITS also classifies trade in services by mode of supply, for which mode 3 (commercial presence) is beyond the balance of payments resident to non-resident requirement. The mode of supply classification serves the needs of negotiations in WTO.

16. Any proposals to change the classification of services in BPM5 need to be discussed with the Inter-Agency Task Force on Statistics of International Trade in Services since that could affect the classification of services recommended in MSITS. Revisions to CPC also need to be coordinated with any changes to BPM5, ensuring clearer linkages between the two classifications.

E. ICT sector

17. In the international context, the OECD Working Party on Indicators for the Information Society (WPIIS) has been active in attempting to produce ICT classifications. It has generally worked within the constraints of existing classifications to produce draft ICT classifications. To a limited extent, it has proposed changes to existing classifications (notably ISIC, Rev.3.1).

18. In 1998, WPIIS agreed on an activity-based definition of the ICT sector based on ISIC, Rev.3 classes. With the exception of ISIC 5150 (Wholesale of machinery, equipment and supplies), whole ISIC classes were used. The ICT sector definition has recently been improved following OECD input into the 2002 revision of ISIC (ISIC, Rev.3.1). This has resulted in a better definition of the wholesale ICT component, with ISIC 5150 now split into three classes, two of which, classes 5151 (Wholesale of computers, computer peripheral equipment and software) and 5152 (Wholesale of electronic and telecommunication parts and equipment), have been incorporated into the OECD's ICT sector definition.

19. In 2001 and again in 2002, WPIIS considered a harmonized ICT-manufactured goods classification that should be able to be concorded with CPC (or country equivalents). The 2002 paper is to be redrafted, taking into account Canadian and French comments on the classification.

20. Regarding the definition of ICT services, Canada presented a paper on ICT services products to the 2000 meeting of WPIIS and the results of testing to the 2002 meeting. The Canadian proposal is based on the NAPCS development project. It incorporates the principle for ICT service industries, adopted at the 1998 meeting of WPIIS, that the products of a candidate industry must be intended to enable the function of information processing and communication by electronic means. It is clear that more work needs to be done on a list of ICT service products, and it is hoped that that work would feed into the general framework for the revision of CPC.

21. There is clearly a significant amount of work being undertaken on international classifications by a range of working groups, but their work raises a number of questions:

- Does the Commission have concerns that the 2007 ISIC and CPC may not adequately meet the needs of those producing statistics on the services sector? For example, are classifications adequate (and fast-moving enough) to capture the large and growing areas at the blurring boundaries of manufacturing and services?
- Is the Commission comfortable with the use of alternative views (e.g., tourism) to complement the use of standard international classifications?
- Are concerns with classifications in relation to services statistics being identified and fed back to the relevant working groups?

- The Commission has encouraged countries to progress in the implementation of a number of classifications and frameworks (e.g., MSITS) with some priorities indicated. Does there need to be further coordination and priority expressed?

IV. Collection of current price services data

22. All countries need to allocate their limited resources in the most cost-effective way possible. There is also often a political imperative to reduce reporting load on businesses. Despite these common concerns, there are significant differences in approaches to the balance between the breadth and depth of information collected about the services sector. Some countries focus on covering all services sectors on a regular basis at the expense of the depth of information collected, in particular countries just starting on services statistics. Although that approach might be sufficient for broad national accounts requirements, it does not satisfy the specific and detailed information needs of many external clients.

23. Such countries as Australia and Canada, on the other hand, focus more on the heterogeneity of services, and recognize that there are many services industries and many variables that do not require measurement with the same frequency, in the same detail and on the basis of the same data sources.[4] Countries using the latter approach tend to collect structural information at a broad level on a regular basis and have rolling programmes of surveys to collect detailed information. A few countries also run economic censuses to collect input/output information for most of the services sector and to obtain information for benchmarking more frequent surveys (e.g., Malaysia and the United States).

24. To help reduce costs and reporting load, national statistical agencies now make greater use of administrative data in lieu of direct collection, and they are using more efficient survey design techniques.[5] The use of administrative data, however, presents a number of problems for statistical agencies. Problems with administrative data include data content, concepts, definitions and statistical units not matching statistical standards; changes can be out of the statistical agency's control; differing reference periods; and data-quality problems (e.g., industry coding at fine levels).[6]

25. Despite the problems associated with using administrative data in the production of services statistics, statistical agencies are working more closely to overcome them. The OECD Short-term Economic Statistics Expert Group recently noted that differing institutional environments between countries preclude any significant benefits from any comparative studies on the types of administrative data being used by different countries, though there may be benefits in sharing successes that some countries have had in influencing the quality (e.g. timeliness) of administrative data provided by other agencies.[5]

A. Supply side

26. On the supply side, knowledge about services sector production and client markets lags behind that of the manufacturing sector. A number of countries have shown that it is possible, though not always easy, to collect turnover information by product type. One of the difficulties is that CPC is not fully developed for particular

services. The current development of services price indexes, together with the demands from the national accountants and other clients, will increase future pressure for production data on services.[7]

27. In the 1990s, the Voorburg Group developed a framework of model surveys that aimed to collect, within a particular service industry, prices and quantities of CPC services sold domestically and abroad. The first model survey was on computer services and it was developed as a set of modules, to be adopted singularly or together. As pointed out at the twenty-third session of the Commission, the actual strategy of collection — the precise wording of each question and the manner in which the different modules should be dealt with — is a matter for agencies to decide. The model survey itself was designed to handle estimation of value added in current values for that industry, as well as to compile statistics relating to the domestic production and international trade in service products. Based on the conceptual framework of the production accounts of the national accounts, different modules covered:

- Output and revenues from sale of services.
- Inputs, including purchased inputs of goods and services used.
- Goods and services purchased for resale and other expenses.
- Labour, in terms of remuneration, employment and occupation.
- Research and development expenditure/investment.
- Capital expenditure and depreciation.
- Imports and exports.[8]

28. Since the development of the computer services model survey, other model surveys have been developed for telecommunications, market research and advertising, audio-visual services and ICT usage. Additional modules are also planned to cater for data outside the core survey, which are increasingly recognized as important. Examples include innovation and globalization.

29. One of the major successes of the model survey approach has been testing and improving CPC. It has been useful for summarizing and sharing information about particular industries and as a framework for countries in the early stages of developing a services statistics programme. On the down side, international comparability of data has been inhibited by the flexibility and lack of prescription in the model about collection aspects. Further work might be considered to standardize the categories for which input data are to be collected, to define the collection variables and to delineate the units that constitute the observation target for these surveys.[8]

30. In addition to model surveys, greater transparency of key aspects of survey design and methodology would enable users to formulate assessments of the impacts of methodological differences between countries. That is an area where the Voorburg Group could potentially play a stronger role.

B. Demand side

31. Most official statistics on services are supply-side oriented; however, demand-side statistics can give insight into the use of services by businesses and households and enable the identification of services creating value added to industrial production. Demand-side studies are required for input/output tabulation purposes and also by policy-making users. Other reasons for carrying out demand-side surveys on the use of services by businesses are to assess the relative efficiency of businesses, to identify shortage of skills of the employees and to identify barriers to international trade in services.[9]

32. In response to the need for demand-side statistics, a number of countries have attempted to collect data on purchases of services by businesses. Feedback from a Eurostat pilot study and the United States Bureau of the Census concluded that it is feasible to collect this type of data despite the problem of identifying the proposed detailed service breakdowns in the accounting systems of businesses. Other countries, such as Australia and Canada, have had success in collecting that information through tailored industry specific forms and requesting the less detailed breakdowns that exist in business accounts. Those countries are not trying to measure the problematic labour components of purchased services in much detail. All of those countries are trying to find better and more efficient ways to collect and provide that critical information, without imposing an unreasonable reporting load on businesses.

C. Short-term economic statistics

33. In recent years, there has been an increase in focus on short-term economic statistics. Short-term statistics encompass a broad range of statistics, including quarterly national and financial accounts; monthly statistics on prices and costs; and measures of output and demand, the labour market and external trade. During that period, OECD has taken the lead in improving cooperation between European and non-European OECD countries in this area. In particular, OECD established the Short-term Economic Statistics Expert Group, which met for the first time in June 2002. Previously, bilateral discussions between Eurostat and non-European countries had been held.[10]

34. Future activities of the Expert Group[5] comprise:

- Guidelines for the development of short-term indicators for services and work on related conceptual issues.
- Processes for improving the timeliness of short-term economic indicators, including the use of benchmarking techniques.
- Best practice for the presentation of short-term economic indicators and related work on seasonal adjustment.
- Best practice to reduce the cost (to both providers and statistical agencies) of collecting short-term economic statistics.

35. Progress on these activities will take one of two possible forms. Three task forces have been formulated to tackle the first three activities, and the Internet will be used to identify and disseminate information on best practice by OECD member

countries. The fourth activity, on reducing cost and load to providers, will be tackled via the Internet alone. Given that these issues are uppermost in the priorities of most countries, the work of the Expert Group will need to be closely coordinated with the work of other groups, particularly the Voorburg Group and the joint OECD/Eurostat task force on price indexes for services.

1. Short-term indicators for services

36. A major priority is the need to extend the current range of short-term economic statistics available for the services sector. The Expert Group has noted the introduction of output indicators (based primarily on turnover) by many OECD member countries over the last few years, though these were not necessarily comparable. It has also noted the close relationship between future work on the development of demand and output indicators for services and the development of appropriate price indexes for the services sector.

37. In contrast to the demand for output indicators for the manufacturing sector, service indicators do not currently receive as much attention or use by the user community. There is a need to compile and disseminate information on the use and interpretation of indicators for this sector, which entails clarification of conceptual issues, strengthening the relationship between indicators for services and those of other sectors and analysing the impact of movements in indicators for services on the overall business cycle.

38. Another key issue in many countries is the need to improve the timeliness of short-term economic statistics while ensuring an appropriate balance between improvements in timeliness and accuracy. The use of benchmarking techniques is considered to be one possible means for making significant advances in that area. The continuation of issues raised in the European Union and the United States benchmark study will also be addressed.

39. Although considerable work has been done by European Union countries to achieve greater harmonization of short-term economic indicators, comparability with non-European Union countries has had a much lower priority with regards to future work. Where the focus of short-term indicators is on comparisons of percentage changes, rather than relative levels of activity between different services industries, it may be possible to live with less than perfect harmonization.

2. Service sector business tendency surveys

40. In 2003, OECD will expand the range of business tendency survey (BTS) data on its main economic indicators database to include more information for the services sector. Currently, BTS data are largely restricted to manufacturing even though the national statistical organizations and private institutes in many countries have collected business opinion information for services for some time. Discussions are currently under way to coordinate that activity with the European Commission. The project also entails the dissemination of summary metadata to enable users to compare methodologies, definitions, etc. used in the collection of BTS data.

41. The discussion on the collection of current price services data raises the following questions for the Commission:

- Is there an appropriate balance between the availability of supply and demand-side statistics? Should more effort and resource be channelled into the production of more demand-side statistics on services?
- Model surveys have proved useful for developing countries, but one of their deficiencies is that they do not force international comparability of the data. Should the Voorburg Group take a stronger role to assist countries in achieving greater comparability of data items and statistical units?
- Does the Commission have any advice for the Expert Group on their planned future activities in regard to services statistics (see para. 34 above)?

V. Price indexes for services

42. The *Handbook on Price and Volume Measures in National Accounts*[11] produced by Eurostat has proven to be a very helpful reference for price and volume measures, especially for the measurement of non-market output. However, the fact that the vast majority of services are not physically observable makes it very difficult to apply meaningful descriptors to the quantities produced. In the absence of meaningful metrics on quantities, greater reliance has to be placed on price indexes to enable comparisons of volumes over time or space.

43. The increasing significance of services relative to goods, and the resulting increase in the compilation of current value data on the output of service industries and/or the value of expenditure on services has created a greater demand for temporal price indexes for services within national statistical systems. The heightened awareness of the need to make better international comparisons of the levels of economic activity has created a demand for cross-country spatial price measures (purchasing power parities or PPPs). Demand for the latter can be expected to grow significantly following rejuvenation of ICP.

44. Price indexes for services are also required in their own right as important components of broader domestic measures of price inflation, such as aggregate producer price indexes and consumer price indexes.

45. Relative to producers of goods, service providers have an almost infinite capacity to tailor the final "product" to the specific requirements of the final user, which generally results in a significantly larger number of discrete service products per dollar of revenue/expenditure than for goods. The addition of complex pricing plans and the increasing incidence of suppliers "bundling" together into a single package what may previously have been regarded as a number of discrete products (e.g., mobile phone businesses who virtually give away the handsets when providing telecommunication services) creates enormous conceptual and methodological problems for prices statisticians.

46. The problems encountered in compiling price indexes for services vary significantly from industry to industry or from service to service. Pricing to constant quality is particularly difficult to achieve because the characteristics of services being sold in the marketplace and their terms of sale frequently change over time. Pricing comparable services across countries is even more difficult since differences in market structures, industry maturity and regulatory arrangements serve to further differentiate products — services defined for pricing in temporal indexes can be totally inappropriate for spatial comparisons.

47. A key requirement for the establishment of a sound suite of service price indexes is a reliable demand based commodity classification to assist in identifying the "services" (or bundles of services) to be priced. CPC and the Classification of Individual Consumption According to Purpose (COICOP) are used as starting points by most countries, but there is widespread recognition that they are deficient in many areas and not well suited to coping with the dynamic nature of service industries. The experience of the North American countries in trying to develop a demand-based product classification might provide a useful contribution to that end.

A. Producer price indexes

48. Based on the OECD-Eurostat inquiry into national collections of services producer prices,[12] 20 countries or areas are currently collecting producer price index (PPI) data for services industries, with Hong Kong, China, being the only country of area, to our knowledge, outside OECD active in that field. The programme of service industry PPIs within countries collecting such data varies considerably, with many countries having only recently established operations in that field. Australia, Japan, New Zealand, the United Kingdom and the United States have the most established programmes, covering a large number of industries, whereas most European countries have only recently begun work on service industries PPIs.

49. A large proportion of countries with PPIs for services industries have set up PPIs covering areas of telecommunications, hotels, sea and air transport. Given their relatively large contribution to most countries' economies, PPIs in those areas are often a good starting point. The main gap lies in the coverage of business services, for which there are a large number of products. In particular, many countries are focusing resources on establishing a PPI for computer services due to its large and generally increasing contribution to their gross domestic product (GDP). That work will also be very useful for developing improved deflators for software investment in the national accounts, which was identified at the 2002 meeting of the International Association for Official Statistics on the new economy as a major area of weakness.

B. Consumer price indexes

50. All countries include at least some services in their consumer price indexes (CPIs). Variations in the coverage of services can largely be attributed to conceptual and methodological difficulties encountered in constructing comprehensive measures for the strongly growing areas of financial and telecommunication services. However, very few countries would claim to be satisfied with their ability to consistently compile all of their service indexes to constant quality.

C. International work on services prices

51. The key players in furthering international cooperation and coordination on developments in service price indexes are Eurostat, OECD, IMF, the International Labour Organization (ILO), the Voorburg Group on Services Statistics and the Ottawa Group on Price Indexes. In an effort to bring a greater degree of coordination and cooperation in their development, Eurostat and OECD have

established a task force on service industry PPIs, with a particular focus on coordinating implementation work in that field within the European Union. The task force also has a brief to consider wider issues of international comparability across the OECD. The rejuvenation of ICP is also expected to prompt significant conceptual and practical measurement issues in future.

52. The Voorburg Group has played a major role in recent years in providing a forum for discussions on tackling the complex pricing issues unique to some particular industries for which PPIs are being developed. A key output of the Voorburg Group is the "principal paper", which presents best-practice methodology on pricing techniques within a particular industry, including a summary of how countries currently producing a price index for the industry have applied the various methodologies available to best fit the situation within their country. The documentation produced and inter-country contacts established through the Voorburg Group have been of great assistance to countries establishing new or reviewing existing service industry PPIs. Quality change in services industries is a key issue for discussion at the Voorburg Group meetings. There is a need to develop and document appropriate quality adjustment techniques.

53. In recent years, the Ottawa Group on Price Indexes has been particularly active in encouraging research on the production of price indexes for financial and telecommunications services. That agenda is being extended at the forthcoming meeting in Paris (May 2003) to include health and social services and the more general problems associated with coping with the complex pricing schemes that tend to be increasingly used by service providers.

54. A number of international manuals are currently being drafted. The Intersecretariat Working Group on Price Statistics is charged with responsibility for the revision of the ILO *Manual on Consumer Price Indices* and the preparation of an IMF manual on producer price indices. The bulk of the work on those manuals is being carried out under the auspices of two technical expert groups, one on the CPI with the ILO/ECE as secretariat and one on the PPI with the IMF as secretariat. Those manuals will prove useful references when establishing or reviewing price indexes for services, since they will contain detailed information specific to services.

55. Eurostat, OECD and the World Bank are coordinating the preparation of manuals for the construction of cross-country price comparisons.

56. In the last few years, producer prices have been one of the main focuses of the Voorburg Group. To help set their future work programme, specific questions for the Commission are:

- Should the Voorburg Group continue to focus on prices issues?
- What mechanisms are in place to coordinate Voorburg Group work on services prices with work undertaken by the Eurostat/OECD task force on services PPIs?
- How should work on developing improved deflators for software investment be carried forward?

VI. International trade in services

57. The Inter-agency Task Force on Statistics of International Trade in Services, established in 1994, has a broad base, comprising representatives from OECD (Convener), Eurostat, IMF, UNCTAD, the United Nations Statistics Division and WTO. The Task Force developed the MSITS,[2] which was published jointly by the six organizations electronically and free of charge in December 2002. The United Nations Statistics Division is currently preparing to publish the printed version for sale. MSITS provides international guidelines for the compilation of statistics on international trade in services. A more fully developed statistical framework for international services transactions would support trade negotiations and agreements.

58. The Task Force is now focusing on:

- Promoting implementation of MSITS through information posted on the web sites of its member agencies, the presentation of papers and participation at conferences and coordinated data collection by the member agencies.
- The preparation of compilation guidance.
- Considering ways in which technical assistance to countries might be facilitated.
- Preparing an appropriate framework for the compilation of data on the movement of natural persons to take up short-term employment.[13]

59. OECD has published trade in services by partner country and foreign affiliate trade in services for some countries. Eurostat publishes detailed data on trade in services with the main European Union partners, a detailed geographical breakdown of European Union trade for the main services items, and partial information on inward and outward foreign affiliates trade in services. IMF is planning to expand the databases on trade in services to collect trade data classified by the Extended Balance of Payments Services classification — an MSITS recommendation. UNCTAD collects data from countries on operations of transnational corporations, including those of foreign affiliates in the services sector.

60. There are a considerable number of other agencies with an interest in the field. The World Bank is becoming more involved in providing technical assistance and funding. Such organizations as the World Tourism Organization and the World Health Organization are also active in those areas relevant to their fields of interest.

A. Compilation guidance

61. The Commission has requested that the Task Force focus on the provision of compilation guidance. Eurostat is now developing an outline of a guide which will be discussed at the next Task Force meeting to be held in April 2003. For resident to non-resident trade in services, material will be drawn from, among other sources, the *Balance of Payments Compilation Guide*.

62. The World Tourism Organization has developed a model border survey that might be used to collect data suitable both for tourism statistics and for the travel component of the balance of payments. UNCTAD is developing guidance material on the compilation of foreign direct investment (FDI) and foreign affiliates trade in

services, a draft of which was used to train FDI statisticians of member countries of the Economic and Social Commission for Western Asia.

B. Movement of natural persons to take up non-permanent employment

63. Movement of natural persons covers individuals who are residents of one country and are employed by an enterprise in a second country to work in that second country on a non-permanent basis. Countries make commitments under the General Agreement on Trade in Services (GATS), and while some data are available from balance of payments statistics there is a need for development of statistics related to employment and income of foreign nationals. That is not well developed in MSITS and the Task Force is investigating ways to further this work. UNCTAD, with the contribution of relevant international organizations, is engaging in pilot studies at the regional and national levels to identify issues that may need to be addressed in developing a statistical framework. Discussions are being planned with the United Nations Statistics Division on the feasibility of future adaptation of migration statistics and with IMF on reviewing the definition of residence of temporary foreign workers in the *Balance of Payments Manual* context.

C. Foreign affiliate trade in services

64. As well as providing services by way of trade between residents and non-residents of an economy (measured in balance of payments statistics), enterprises in an economy may also supply services internationally through the activities of foreign affiliates abroad. MSITS recognizes this in its recommendations for foreign affiliate trade in services (FATS) statistics.

65. Although this is a less well-developed area, some statistics for foreign-owned affiliates in the compiling economy may be found in or derived from existing statistics on domestic production, including national accounts statistics. However, collection of information on the trade in services of a country's affiliates abroad typically requires dedicated collections. Very few countries conduct such collections.

66. The recommended basic FATS variables are sales (turnover) and/or output, employment, components of value added, exports and imports of goods and services, and number of enterprises (needs careful definition). Additional FATS variables identified are assets, compensation of employees, net worth, net operating surplus, gross fixed capital formation, taxes on income, and research and development expenditures.

D. Further developments

67. E-commerce and trade in software are two areas where the Task Force has identified a need for further investigation of the most appropriate statistical treatment. Countries currently classify trade in software to goods, computer services, and/or royalties and license fees. In addition, there are transactions related to the use of reproduced originals, in particular to reproduce software for further

sale. Work has been done on these issues by the Task Force on software that was set up by an OECD meeting of national accounts experts in 2000.

68. Further work is required on measuring trade in services statistics. The ways in which services are "exported" can be quite diverse and difficult to track (e.g., services provided via the Internet). Services, unlike goods, do not usually get registered at custom points. Coverage is a particular problem, with transportation a long-standing global discrepancy. Further development work is also required in particular areas, such as financial, insurance, Internet-related and environment-related services.

69. In recent years, the international community has been very active in addressing trade in services issues. Specific questions for consideration by the Commission are:

- Are there any areas of MSITS that require further development (e.g., movement of natural persons to take up non-permanent employment, Internet transactions) or further coordination?
- Is the Commission comfortable with the attention provided to the provision of compilation guidance (e.g., through the *Balance of Payments Compilation Guide*)?

VII. Other conceptual and measurement issues

A. Definition and measurement of ICT

70. Although a number of countries have been active in the area of ICT statistics, there seems to be growing recognition that OECD is leading the way in standard-setting. OECD has been addressing the need for international standards for ICT statistics for a number of years, with the first OECD meeting on indicators for the information society held in June 1997, an ad hoc meeting held under the aegis of the newly created Information, Computer and Communications Policy Statistical Panel. The aim of the Panel was to establish a set of definitions and methodologies to facilitate the compilation of internationally comparable data for measuring various aspects of the information society, the information economy and electronic commerce. In 1999, the ad hoc group became the Working Party on Indicators for the Information Society (WPIIS).

71. The current ICT data framework can be viewed in economic terms as the set of ICT goods and services produced, consumed and traded. Production includes output from ICT industries and from electronic content industries (together comprising information industries). The production aspect is often referred to as the supply side. Consumption includes use of technologies, including e-commerce activities. On the supply side, most WPIIS effort has been on defining the ICT sector, both in terms of industry classes and commodities produced. On the demand side, work has been undertaken on defining and measuring e-commerce and on developing model questionnaires of household and business use of ICT.

72. Achievements of WPIIS in the areas of standards and dissemination include an activity-based definition of the ICT sector; a broad level classification of manufactured ICT commodities; broad and narrow definitions of e-commerce transactions; a partial set of core e-commerce indicators for businesses and

households; model questionnaires for collecting business use of ICT and e-commerce statistics, and for collecting statistics on household and individual use of ICT; publication of ICT industry and activity statistics for member countries; and a compendium publication, *Measuring the Information Economy 2002*, containing demand and supply side ICT data for national statistical organizations and available free on the web at www.oecd.org/sti/measuring-infoeconomy.

B. Knowledge-based economy and society measurement

73. There is no internationally agreed framework for measuring the extent to which an economy or society is knowledge-based. Considerable effort has been made by national and international organizations to measure the knowledge-based economy. Less work has been undertaken on measuring a knowledge-based society.

74. In reviewing international contributions in this area, Australia[14] found that various compilations of knowledge-based economy statistics have been developed, many of which are based on the 1996 OECD definition of a knowledge-based economy.[15] Some are more heavily focused on ICT as the main driver of growth in a knowledge-based economy. Others acknowledge ICT as an enabling technology of a knowledge-based economy but also encompass other factors as contributing to economic growth (e.g., employee skill levels, knowledge creation in the form of research and development and innovation, knowledge and technology transfer).

75. Although most of these compilations could probably be described as "descriptive frameworks", the majority are implicit rather than explicit frameworks. That is, the framework is defined in terms of the statistics which it presents rather than being derived on the basis of theory or empirical evidence. A notable exception is the Asia-Pacific Economic Cooperation (APEC) Economic Committee's 2000 knowledge-based economy framework,[16] which is based on empirical evidence.

C. Definition and measurement of innovation activity

76. Innovation has been defined as the application in any organization of ideas new to it, whether they are embodied in products, processes, services or in the systems of management and marketing through which the organization operates.[17] Innovation is a central characteristic of a successful modern economy. It is not confined to manufactured products and is much more than research or mere invention. Much less analysis has been done on innovation in services than in manufacturing, where innovation is easier to recognize and measure.[18] A key factor in the expansion of service industries has been organizational innovations that have led to gains in efficiency and competitiveness, notably the introduction of electronic commerce.

77. Industry and science and technology policy makers around the world have been placing increasing pressure on national statistical agencies to provide adequate measures of innovation. Although the lead has come from within the European Union through its series of community innovation surveys, user pressure has also been felt in many other countries, particularly Canada, New Zealand and the United States.[19] Consequently, there has been a joint development by OECD and Eurostat of a still evolving set of guidelines for measuring innovation, the so-called *Oslo Manual*.[20] A deficiency of the *Oslo Manual* is that its focus on technological

innovation does not apply to significant innovations in services (e.g., restructuring distribution and introducing e-commerce), although it is expected that that will be addressed in the revision of the *Manual* that is about to begin. There is also a long-standing question of whether research and development, an important service activity, can be better integrated into the national accounts framework.

D. Satellite accounts

78. It is becoming more important for statistical agencies to provide statistical information on services activities for particular sectors, including specialized sectors, such as tourism, ICT, health, education, environment and non-profit. Sectoral gaps in the services sector have been identified in some of those areas and statistical agencies are struggling to fill them. A satellite account approach has been successful for such sectors. No single classification system can satisfy all users, but alternatives or non-standard groupings can offer a practical and suitable solution.[21] That is not to say that this statistical need should not be taken into account during the development of the 2007 ISIC and CPC.

79. The area of satellite accounting that has received the most attention to date is tourism. A comprehensive set of internationally accepted guidelines has been released in *Tourism Satellite Account: Recommended Methodological Framework*.[22] A number of countries have now developed tourism satellite accounts (TSAs), including Australia, Canada, France, New Zealand, Norway, Spain, Switzerland and the United States, and a substantial number of others are in the process of developing TSAs. Another area of satellite account activity where methodological frameworks have been developed to an extent that an internationally agreed handbook has been issued relates to the activity of non-profit institutions. Australia has recently released a non-profit institution satellite account, and work in some other countries, particularly Canada, is well advanced (more is said on this subject below). The OECD System of Health Accounts could be regarded as a framework for a satellite account, and many countries are now following that system in their international reporting.

80. Other areas of satellite accounting for services are less well developed internationally. France and the United States have produced satellite accounts for transportation, but we are not aware of any other countries actively working in the field. Australia has been developing an information and communication technology satellite account, and some initial steps have been taken to develop frameworks for an education and training satellite account.

81. The international community needs to decide if there is value in developing frameworks for further satellite accounts and how to advance them in the most effective manner. Experience has shown that active leadership needs to be taken by an international organization, a research institute or a country to progress the work through to a set of internationally accepted guidelines.

E. Globalization

82. In the past three decades, there has been a pronounced change in the world economy. There has been an increasing cross-national spread of products, markets, firms and factors of production, resulting in globally integrated production networks

controlled by multinational corporations. Globalization activity can be broadly divided into three main areas — trade, direct investment and the activity of multinational firms, and the international dissemination of technology. The measurement of FATS is one of the key elements of the globalization framework.

83. The international economic and statistical community has been looking at ways to define and measure globalization activity for some time. OECD has released the draft manual on economic globalization indicators, and is seeking to finalize it shortly.

F. Non-profit institutions

84. Non-profit institutions (NPIs) are recognized as an important part of the social fabric in many nations, often playing an important role in providing health, education, social welfare and recreation and cultural services. While some NPIs operate in the market by selling goods and services at economically significant prices, many provide services free of charge and are funded by government and community grants, donations and subscriptions, and from services provided free by volunteers.

85. The 1993 SNA recognized the special characteristics and growing role of non-market NPIs serving households by introducing a new institutional sector in the national accounts — "Non-profit institutions serving households" (NPISH). Previously, NPISHs were included along with households and unincorporated enterprises in the households sector. However, many statistical agencies have yet to implement the 1993 SNA recommendations regarding the new sector. Although the implementation of the 1993 SNA recommendations would be a major advance in the information available, it would still fall short of a set of statistics on all NPI entities. This is because market NPIs would remain subsumed within the financial and non-financial corporations sectors, and non-market NPIs serving government within the general government sector.

86. There is growing interest in data on the activities of NPIs as a group, in recognition of which the *Handbook on Non-profit Institutions in the System of National Accounts* was released, in draft form, by the United Nations Statistics Division in March 2002. It was written in close collaboration with the Johns Hopkins University Center for Civil Society Studies, which has been the leading research organization in the field for many years. The *Handbook* provides conceptual and classification frameworks and advice on implementation, and should provide impetus to the further development of data for NPIs, both in the context of the national accounts and more generally.

87. There are a number of practical issues that need to be further examined as countries move to implement the framework. Further international discussion will need to occur if international comparability of estimates is to be achieved. Some issues include:

- Scope and classification, particularly the boundary between market and non-market organizations and general government units and NPIs.
- The development of statistical registers of NPIs.

- Adapting industry surveys to collect information for NPIs (industry surveys are typically designed around the activities of market producers).

88. A number of key conceptual and measurement issues have been identified above. Specific questions for the Commission include:

- For the priority areas identified, is there sufficient work internationally on addressing the issues?
- Are there other priority conceptual and measurement areas impacting on the services sector?

VIII. Developing countries

89. In many developing economies, as in developed economies, service industries account for over 50 per cent of GDP. Services are also generally the fastest growing sector. However, the quality of data on services is often inadequate for policy development, especially in comparison with data on manufacturing, resources and agriculture.

A. Impact of ICT

90. A major driver of the growth in services trade has been information and communications technology, which enables the activities of whole sectors of the economy — including banking, accounting and computer programming — to be carried out anywhere in the world and delivered to customers in a matter of seconds. Electronic commerce, a hallmark of the new economy, widens the scope of such trade to many other sectors. Thus, technology is creating a borderless economy in many services, which will raise their economic importance in some developing countries while making it more difficult but more urgent to obtain better statistics on those industries.

B. Informal sector

91. The contribution of the informal sector is also often not adequately captured in official statistics. To promote better public understanding of — and public policy responses to — the informal sector, improved statistics on the size, contribution and characteristics of the informal sector are needed.[23]

92. The Delhi Group on Informal Sector Statistics is working on concepts and measurement issues for improving the quality and comparability of informal sector statistics, including survey methodologies that take into account the 1993 SNA and the resolutions of the International Conference of Labour Statisticians.

C. Non-observed economy

93. For some years, OECD has been working with transition and developing countries to improve measurement of the "non-observed economy" (NOE). As defined by OECD, the NOE includes the informal sector but is much broader in that it also covers underground and illegal activities. It also covers other activities that

are missing from official statistics, either because they fall below a size threshold for surveys or because the survey frames or collection procedures are faulty. In general, most of the NOE involves service production — trade, transport, home repairs and personal services.

94. Although most countries make efforts to cover some part of the NOE in their national accounts, it is certain that coverage is inadequate in most developing and transition countries. OECD organized an international team to identify best practices for measuring the NOE, and in 2002 published a handbook on measuring the NOE. OECD will launch several initiatives in 2003 to help countries implement the recommendations of the handbook. Initially, they will be focused on the countries of the former USSR and the West Balkan countries.

95. Specific questions on services statistics for developing countries are:

- Are there particular conceptual issues relating to measuring services in developing countries that need to be addressed? What are the best mechanisms for progressing the work?
- Is adequate guidance available to developing countries on practical measurement issues for services statistics?

IX. Conclusion

96. There are clearly many worthwhile initiatives that have been completed in recent years or are currently under way which will significantly improve the cause of services statistics internationally. The Commission can be pleased with the progress made by international agencies, task forces and other expert groups. The present report has highlighted, however, a number of areas where we might seek to improve our collective efforts.

97. The relevant questions raised at the end of each section of the report have been broadly summarized into the following three questions (members may still wish to reference individual questions during discussion of the present report).

98. The main issues are:

- Whether the international statistical community needs to increase the priority of and resources devoted to services statistics. For instance, establishing the concepts, frameworks and techniques required for the measurement (including classification) of service activities in the economy, expanding measures of international trade in services, specialized sectoral work on, for example, tourism, ICT, health, education. Whether there is also a need to review associated data-collection activities undertaken by international organizations for analytical purposes so as to better reflect the economic importance of services. If more work is to be done, then what work should be undertaken and who should do it?[13]
- Whether current coordination mechanisms could be made more efficient. What mechanisms could be put in place to ensure that the large number of expert groups reviewing different aspects of service statistics work in a coordinated way to avoid duplication of effort and ensure more coverage of issues? Should there also be greater membership of expert groups outside Europe and North America? How can their agreed conceptual or

methodological outputs be best communicated to all the countries that need them (e.g., via an international agency creating a web page with links to current work)?[13]

- **Given the importance attached to extending the range of service statistics by national Governments, especially measurement of trade in services and services output, how might the provision of practical measurement guidance to developing countries be coordinated?[13]**

Notes

[1] See second report of a working group involving the European Union, United States and Canadian statistical agencies on the convergence of industrial classification between NACE and NAICS (E/CN.3/2002/21).

[2] European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations, United Nations Conference on Trade and Development and World Trade Organization, *Manual on Statistics of International Trade in Services*, final unedited version (Paris, 2001).

[3] IMF Statistics Department, paper for an IMF Balance of Payments Committee meeting, October 2002.

[4] See Van Laanen J., "Existing gaps in services statistics and how to bridge them: the Dutch approach", paper presented at a Voorburg Group meeting, Copenhagen, 1997.

[5] See OECD Short-term Economic Statistics Expert Group, draft summary of future activities (Paris, 2002).

[6] See T. Viitaharju, "Managing administrative sources, the business register as a link between economic and social statistics", paper presented at the Sixteenth International Round Table on Business Survey Frames, Lisbon, 2002.

[7] See B. Lundstrom, S. Rikama and C. Hertzman, "Pilot surveys on business services enterprises: data collection on products and clients", a paper presented at Voorburg Group meeting, Nantes, 2002.

[8] See J. Ryten, S. Nijhowne and S. Rikama, "The Voorburg Group's tenth anniversary: a review of achievements", paper presented at a Voorburg Group meeting, Voorburg, 1995.

[9] See Voorburg Group, minutes of the thirteenth meeting on service statistics, Rome, 1998.

[10] See OECD Short-term Economic Statistics Expert Group, background paper (Paris, 2002).

[11] Eurostat, *Handbook on Price and Volume Measures in National Accounts* (Luxembourg, 2001).

[12] See W. Cave, "OECD-Eurostat 2002 inquiry on national collection of services producer prices: preliminary report", paper presented at a Voorburg Group meeting, Nantes, 2002.

[13] See OECD, "Programme of review of services statistics for the Statistical Commission", paper prepared for an inter-agency meeting on the coordination of statistical activities, Paris, 2002.

[14] See Australian Bureau of Statistics, *Measuring a Knowledge-based Economy and Society: An Australian Framework* (Australia, 2002).

[15] See OECD, *The Knowledge-based Economy* (Paris, 1996).

[16] See APEC Economic Committee, "Towards knowledge-based economies in APEC" (Singapore, APEC Secretariat, 2000).

[17] See C. Maguire, E. Kazlauskas and A. Weir, *Information Systems for Innovative Organizations* (Academic Press, 1994).

[18] See OECD, "Innovation and productivity in services", proceedings of a workshop held in Sydney, November 2000 (Paris, 2001).

[19] See D. Guellec and B. Pattinson, "Innovation surveys: lessons from OECD countries' experience", *OECD STI Review*, No. 27 (2001).

[20] See OECD/Eurostat, *Oslo Manual: Proposed Guidelines for Collecting and Interpreting Technological Innovation Data* (Paris, 1997).

[21] See minutes of the twelfth Voorburg Group meeting on service statistics, Copenhagen, 1997.

[22] See Eurostat, OECD, United Nations and World Tourism Organization. *Tourism Satellite Account: Recommended Methodological Framework* (Luxembourg, Madrid, New York, Paris, 2001).

[23] See WIEGO web site, "Programme areas: statistics", at http://www.wiego.org/main/areas5.shtml.